Auto-Darkening Filter Welding Helmet
User's Manual

WARNING :Read and understand all instruction before using !

This Auto-Darkening filter Welding Helmet (S777 or S777a model) is designed to protect the eyes and face from sparks, spatter, and harmful radiation under normal welding conditions. Auto-darkening filter automatically changes from a light state to a dark state when an arc is struck, and it returns to the light state when welding stops.

Auto-Darkening filter Welding Helmet comes ready for use. The only thing you need to do before your welding is to adjust the position of the headband and select the correct shade number for your application.

BEFORE WELDING

- Check the front cover lens to make sure that they are clean, and that no dirt is covering the two sensors on the front of filter cartridge. Also check the front/inside cover lens and the front lens retaining frame to make sure that they are secure.
- Inspect all operating parts before use for signs of wear or damage. Any scratched, cracked, or pitted parts should be replaced immediately before using again to avoid severe personal injury.
- Check for light tightness before each use.
- Select the shade number you require at the turn of a shade knob (Seeing the Shade Guide Table No.1). Finally, be sure that the shade number is the correct setting for your application.
- Adjust headband so that the helmet is seated as low as possible on the head and close to your face. Adjust helmet's angle when in the lowered position by turning the adjustable limitation washer.

DARK SHADE NUMBER SELECTION

The shade number can be set manually between 9(9) -13 (12). Check the Shade Guide Table to determine the proper shade number for your application. Select a shade number by turning the shade knob until the arrow points to the required setting (See Shade Guide Table No.1).

PRODUCT FEATURES

- This model is designed & equipped with a special turnover (up & down) headband mechanism. When welder turns over the helmet to welder's head top, the headband mechanism makes helmet's gravity center to be more lower, and be coincided with the center of welder's head. The design of welding helmet greatly lowers the fatigue of welder's head (& neck) and make welder feel more comfortable than before while at working.
- At the moment of starting welding, it automatically changes filter screen from clear to dark in only 1/30,000 sec.
- Dark to clear delay adjustment : Operator can vary the time for the filter to return to clear state.
- Outside sensitivity adjustable can make the operators more convenient while operating.
- At the moment of stopping welding, the filter screen automatically changes from dark to light state according to your per-set delay time.(Turning the time-setting switch to the "short"position--then, it can vary at 0.25s ~ 0.35s; Turning the time-setting switch to the "middle"position--then, it can vary at 0.35s ~ 0.5s; Turning the time-setting switch

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S777
S777a

to the "long" position -- then, it can vary at 0.5s ~ 0.8s).

• "WELDING"/ "GRINDING" can be selective.

• The helmet utilizes high performance solar cells as power supply and has 2 built-in 3V lithium batteries as power back-up. No change of battery is required. And the battery life is raised to a new limit. Under normal welding conditions, users can expect a battery has a lifetime of more than 6 years.

• Variable shade (DIN) from DIN9 (9) to DIN13(12) is adjusted at the turn of a shade knob (shade variable).

• The product is in full conformity with related DIN, ISO, EN safety standards and ANSI Z87.1-2003 standards.

• The ultra high performance of UV/IR Auto-Darkening filters provide full protection for the user's eye & face a against UV/IR radiation during the entire welding process, even in the light state. The UV/IR protection level is up to Shade16(DIN) at all times. It makes welders feel comfortable in welding working.

WARNING:

• This Auto-Darkening filter Welding Helmet is not suitable for laser welding,& Oxyacetylene Welding.

• Never place this Helmet and Auto-darkening filter on a hot surface.

• Never open or tamper with the Auto-Darkening Filter.

• Before operating, please make sure if the function-setting switch set the suitable location "WELDING"/ "GRINDING", or not. This Auto-darkening filter welding helmet will not protect against severe impact hazards,

• This helmet will not protect against explosive devices or corrosive liquids.

• Don't make any modifications to either the filter or helmet, unless specified in this manual. Don't use replacement parts other than those specified in this manual. Unauthorized modifications and replacement parts will void the warranty and expose the operator to the risk of personal injury.

• Should this helmet not darken upon striking an arc, stop welding immediately and contact your supervisor or your dealer.

• Don't immerse the filter in water.

• Don't use any solvents on filters' screen or helmet components.

• Use only at temperatures : - 5°C ~ + 55°C (23°F ~ 131°F).

• Storing temperature : - 20°C ~ + 70°C (-4 ° F ~ 158° F).

• Protect filter from contacting with liquid and dirt.

• Clean filters' surfaces regularly; do not use strong cleaning solutions. Always keep sensors and solar cells clean using a clean lint-free tissue/cloth.

• Regularly replace the cracked/scratched/pitted front cover lens.

Severe personal injury could occur if the user fails to follow the aforementioned warnings, and / or fails to follow the operating instructions.

COMMOM PROBLEMS AND REMIDIES

* Irregular Darkening Dimming

• Headband has been set unevenly and there is an uneven distance from the eyes to the filter's lens (Reset headband to reduce the difference to filter).

** Auto-Darkening Filter Does Not Darken Or Flickers

• Front cover lens is soiled or damaged (change lens cover)

• Sensors are soiled (clean the sensors' surface)

· Welding current is too low (turns the switch to the "Long" position).

*** Slow response

· Operating temperature is too low (do not use at temperatures below - 5 ° C or 23 °F).

**** Poor Vision

· Front /inside cover lens and/or filter lens are soiled (change lens)

· There is insufficient ambient light

· Shade number is incorrectly set (reset the shade number)

***** Welding Helmet Slips

· Headband is not adjusted properly (readjust headband)

WARNING ! Operator must stop using the auto - darkening filter welding helmet immediately if the above-mentioned problems cannot be corrected.Contact the dealer.

LENS & HELMET MAINTENANCE

· **Replacing the front cover lens** if it is damaged (cracked, scratched, soiled or pitted)

Step 1: Remove the front cover lens by pulling up the central part of the lens (figure). Place the new cover lens into the correct position.

Step 2: Check and make sure that the frame is securely installed.

· Replacing the inside cover lens if it is damaged (cracked,scratched, soiled or pitted).

· Cleaning The Filter's Lens with aclean lint-free tissue or cotton cloth.

· Don't immerse the lens in water or any other liquid. Never use abrasives, solvents or oil based cleaners.

· Don't remove the auto-darkening filter from the helmet. Never try to open the filter.

TECHNICAL SPECIFICATIONS

· Viewing Area:	98 × 43 mm (3.86" × 1.69")
· Size of Cartridge:	110 × 90 × 9 mm (4.33" × 3.54" × 0.35")
· UV/IR Protection :	Up To Shade DIN16 at all time
· Light State:	Shade DIN 3 (S777), Shade DIN 4 (S777a)
· Variable Shade:	From DIN 9 to DIN 12 (S777) From DIN 9 to DIN 13 (S777a).
· Power Supply:	Solar cells, No battery change required.
· Power On/Off:	Fully Automatic
· Sensitivity:	Outside Can be continued adjustable.
· Function:	"WELDING"/ "GRINDING" can be selective.
· Switching Time:	
a). Light to Dark:	1/30000 s (0.000033 sec). (- 5 °C , 0.0008 sec).
b). Dark to Light:	0.25~ 0.8 s (short -- middle -- long).
· Operating Temperature:	- 5°C to + 55°C (23°F to 131°F)
· Storing Temperature:	- 20°C ~ + 70°C (-4 ° F to 158° F)
· Helmet Material:	High-impact resistant plastic / Polyamide (Nylon)
· Total Weight:	435 g or 450g

PRODUCT WARRANTY!!!

The manufacturer's sole obligation under this warranty is limited to making replacement or repairs, or refund of the purchase price for the products with defects.

This warranty does not cover product malfunctions or damages resulting from products tampering, misuse or abuse. Please follow the operating instructions carefully to maintain this warranty. Failure to do so will void the warranty. The manufacturer shall also not be hold liable for any indirect or consequential damages arising out of the use of this product.

A copy of the original receipt and serial number (located on filter cartridge's surface) are required as proof of purchase. Please carefully maintain this warranty well. This warranty is non-transferable and extends only to the original buyer purchasing the products directly from the manufacturer or through its authorized distributors, dealers, or agents.

Additionally, All auto darkening filter welding helmet are designed with three necessary special mechanism:

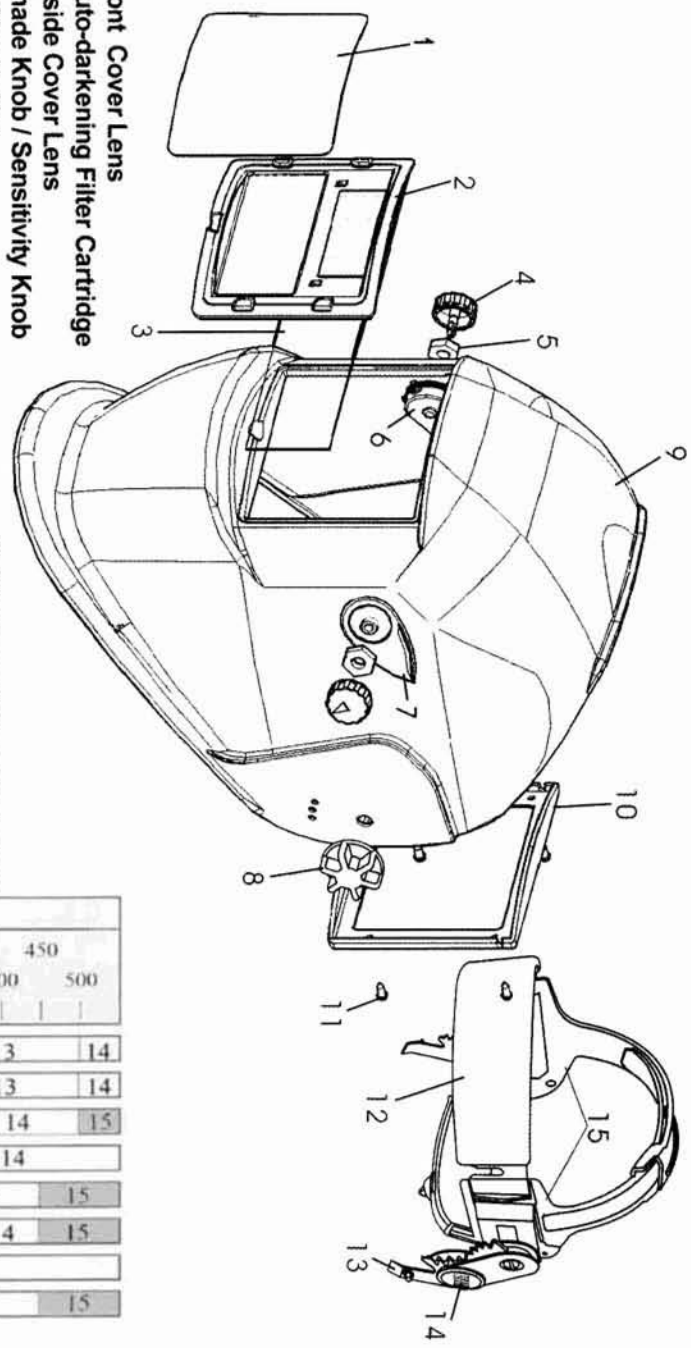
a). A fine-turning mechanism for adjusting the incline angle between welder's eyes and filter lenses.

b). A special mechanism for regulating the distance between welder's eyes and filter lenses.

c). A special headgear mechanism for adjusting the up & down vertical distance between welder's eyes and filter lenses.

d). The gravity center of helmet can be auotomaticlly adjustable.
As a result of above mechanism action, The welder surely feels more comfortable than before, and are in working with more high proficiency at any time.

1.Front Cover Lens
2. Auto-darkening Filter Cartridge
3. Inside Cover Lens
4. Shade Knob / Sensitivity Knob
5. 2×Shade Nut
6. Shade-box/ Sensitivity-box
7. Shade Scale Plate / Sensitivity Scale Plate
8. 2× Block Nut
9. Shell (Welding Mask)
10. Filter Setting Frame
11. 4×Filter Setting Screw
12. Front Headband
13. 2×Adjustable Limitation Washer
14. 2* Screw
15. Adjustable Headband



SHADE GUIDE TABLE(No.1)

Welding Process	Arc Current (Amperes)																									
	0.5	1	2.5	5	10	15	20	30	40	60	80	100	125	150	175	200	225	250	275	300	350	400	450	500		
SMAW								9		10		11				12						13				14
MIG (heavy)											10		11			12						13				14
MIG (light)											10		11			12			13			14				15
TIG,GTAW				9			10			11			12			13						14				
MAG/CO_2										10		11		12			13					14				15
SAW														10		11		12		13		14				15
PAC												11				12						13				
PAW				8		9		10		11			12				13					14				15

Note: * SMAW-Shielded Metal Arc Welding.
* MIG(heavy)-MIG on heavy metals.
* MIG(light)-MIG on light alloys.
* TIG, GTAW-Gas Tungsten Arc Welding(GTAW)(TIG).
* SAW Shielded Semi-Automatic Arc Welding.
* PAC-Plasma Arc Cutting.
* PAW-Plasma Arc Welding.